

**Substitute Specification
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50596/CAB/A400

VIOLA CORNUTA PLANT NAMED 'SUNVIOHO'

BOTANICAL/COMMERCIAL CLASSIFICATION

Viola cornuta/Viola Plant

VARIETAL DENOMINATION

5 cv. 'Sunvioho'

BACKGROUND OF THE VARIETY

The genus of *Viola* is included in the family *Violaceae* ~~plants~~ and has about 500 species of annuals, biennials, evergreen, and semi - evergreen and deciduous perennials found in varied habitats in ~~temperature~~ temperate regions worldwide.

10 Each flower has 5 petals; a spurred lower petal, 2 lateral petals and 2 upward-facing upper petals.

While many ~~Many~~ cultivars within the genus are informally referred to as garden pansies, violas ~~they~~ are all derived from the complex hybridization of *V. tricolour*, *V. lutea*, *V. cornuta*, and other species.

15 *Viola cornuta* has played an important role in the development of garden violas and violettas as a result of cross breeding with the garden pansy ~~which~~ *V. wittrockiana* *wittrockiana*.

Viola cornuta is stem prostrate, with leaves ~~Leaves~~ is narrow to broad ovate, base cordate to truncate, and margin ~~deeply segmented~~ shallow-crenate.

20 The female parent used in the crossing of 'SUNVIOHO' was '9V-39a' which is our breeding line and grown at ~~Omi R&D Center of Suntory Flowers Ltd.~~ Omori-cho, Yokaichi-shi, Shiga-ken, Japan

The pollen parent used in the crossing of 'SUNVIOHO' was 'Alpine Sun', whose ~~Whose~~ seeds were bought from Daiichi Seed Co., Ltd. (Japan).

25 **BREEDING PROCESS**

~~First of all, crossing~~ Crossing between '9V-39a' as female parent and 'Alpine

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Sun' as male parent was conducted at Omori-cho, Yokaichi-shi, Shiga-ken, Japan
~~in the Omi R&D Center of Suntory Flowers Ltd.~~ April 2000. In May, ~~some~~ seeds
were obtained from the crossing and ~~The seeds~~ were sown and grown ~~thereat the~~
same location. In August, three seedlings were selected in view of having highly
5 spreading habit with white petals from 20 seedlings obtained, and propagated by
cutting. Those three seedlings were tested ~~carried out a trial~~ by flower potting and
bedding from October 2001, at Omori-cho, Yokaichi-shi, Shiga-ken, Japan ~~the Omi~~
~~R&D Center of Suntory Flowers Ltd.~~ Finally one variety was selected in view of
having a long blooming time. The botanical characteristics of that plant were then
10 examined, using similar variety 'Violetto Nive' and 'Alpine Summer' for comparison.
As a result, it was concluded that this *Viola cornuta* plant is distinguishable from any
other variety, whose existence is known to us, and uniform and stable in its
characteristics. ~~Then~~ the new variety of *Viola cornuta* plant was named
'SUNVIOHO'.

15 ~~These of~~ *Viola cornuta* plants, 'Alpine Sun' and '9V-39a', are presently
maintained at ~~the Omi R&D Center of Suntory Flowers Ltd., located at 863-1, Aza-~~
~~Iketani,~~ Omori-cho, Yokaichi-shi, Shiga-ken, Japan.

This new and distinct variety of *Viola cornuta* plant, 'SUNVIOHO', was
asexually reproduced by tissue culture at the aforementioned the Omori-cho,
20 Yokaichi-shi, Shiga-ken, Japan ~~Omi R&D Center of Suntory Flowers Ltd.,~~ and the
homogeneity and stability thereof were confirmed.

DESCRIPTION

In the following description, the color-coding is in accordance with the
Horticultural ~~Celer~~ Colour Chart of The Royal Horticultural Society, London, England
25 (R.H.S. ~~Celer~~ Colour Chart).

The botanical characteristics of the female parent plant '9V-39a' used in the
crossing of 'SUNVIOHO' are as follows.

Plant:

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Stemmed or non-stemmed - Stemmed

Growth habit - Spreading

Height - Approximately 9 cmPlant cover - Approximately 49 cm

5 Stem:

Length - Approximately 36 cm

Branching - Much

Pubescence - Present

Leaf:

10

Overall form - ~~Long-oblong~~ Narrow elliptic

Apex form - Acute

Base form - Acute

~~Serrated, lobed or not~~ Serrated or lobedMargin - ~~Serrated or slightly lobed~~

15

Length - Approximately 1.9 cmWidth - Approximately 1.2 cmColor of upper surface - Grayish olive green (Near R.H.S. 137A)Color of under surface - Moderate yellow green (Near R.H.S. 137C)

Variegation - Absent

20

Leaf luster - Lustrous

Vein - Distinct

Petiole length - Approximately 1.4 cmStipule length - Approximately 1.8 cm

Flower:

25

Peduncle length - Approximately 7.5 cm

Peduncle thickness - Thin

Peduncle color - Strong yellow green (Near R.H.S. 144B)

Flower form - Vertically oblong

Flowering direction - Upward

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Longitudinal diameter - Approximately 3.2 cmHorizontal diameter - Approximately 3.0 cm

Ruffle of petal margin - Weakly ruffled

Petal curving - Very weak

5 Petal number - Single

~~Flower color - Self-colored~~

Upper petal

Form - Round

Size - Approximately 1.6×1.6 cm10 Petal color - ~~Self~~Single-coloredGround color - Pale yellow green (Near R.H.S. 157A)

Blotch - Absent

Side petal

Form - Ovate

15 Size - Approximately 1.3×1.5 cmPetal color - ~~Self~~Single-coloredGround color - Pale yellow green (Near R.H.S. 157A)

Blotch - Absent

Lower petal

20 Form - Cordate

Size - Approximately 1.9×1.9 cmPetal color - ~~Self~~Single-coloredGround color - Pale yellow green (Near R.H.S. 157A)

Blotch - Absent

25 Eye color - Vivid reddish yellow (Near R.H.S. 14A)

Eye size - Medium

Thickness of petal - Medium

Spur length - Longer than the sepal appendage

Sepal - Short

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Number of flowers - Many

Seed:

Color - Deep brown

Physical property:

5 Flowering time - Late

Fragrance - Faint ~~or weak~~

Resistance

Rain - Strong

Cold - Strong

10 Heat - Medium

Disease - Strong

Pest - Strong

~~And~~ The botanical characteristics of the male parent plant 'Alpine Sun' used in the crossing of 'SUNVIOHO' are as follows.

15 Plant:

Stemmed or non-stemmed - Stemmed

Growth habit - Spreading

Height - Approximately 8 cmPlant cover - Approximately 35 cm

20 Stem:

Length - Approximately 25 cm

Branching - Much

Pubescence - Present

Leaf:

25 Overall form - ~~Long-oblong~~ Narrow elliptic

Apex form - Obtuse

Base form - Acute

~~—— Serrated, lobed or not~~ Serrated or lobed

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Margin - Serrated or slightly lobed

Length - Approximately 2.1 cmWidth - Approximately 1.0 cmColor of upper surface - Grayish olive green (Near R.H.S. 137A)5 Color of under surface - Moderate yellow green (Near R.H.S. 137C)

Variegation - Absent

Leaf luster - Matte

Vein - Apparent

Petiole length - Approximately 2.2 cm10 Stipule length - Approximately 2.1 cm

Flower:

Peduncle length - Approximately 8.0 cm

Peduncle thickness - Thin

Peduncle color - Strong yellow green (Near R.H.S. 144B)

15 Flower form - Vertically oblong

Flowering direction - Upward

Longitudinal diameter - Approximately 3.3 cmHorizontal diameter - Approximately 2.5 cm

Ruffle of petal margin - Flat

20 Petal curving - Weak

Petal number - Single

~~Flower color - Self-colored~~

Upper petal

Form - Round

25 Size - Approximately 1.1×1.0 cmPetal color - ~~Self~~Single-coloredGround color - Vivid yellow (Near R.H.S. 9B)

Blotch - Absent

Side petal

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- Form - Ovate
Size - Approximately 1.2×1.0 cm
Petal color - ~~Self~~Single-colored
Ground color - Vivid yellow (Near R.H.S. 9B)
5 Blotch - Absent
- Lower petal
Form - Cordate
Size - Approximately 1.4×1.3 cm
Petal color - ~~Self~~Single-colored
10 Ground color - Vivid yellow (Near R.H.S. 9A)
Blotch - Absent
Eye color - Vivid yellow (Near R.H.S. 13A)
Eye size - Small
Thickness of petal - Thin
15 Spur length - Longer than the sepal appendage
Sepal - Short
Number of flowers - Many
- Seed:
Color - Deep brown
20 Physical property:
Flowering time - Late
Fragrance - Absent
- Resistance
Rain - Medium
25 Cold - Strong
Heat - Medium
Disease - Strong
Pest - Strong

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~~_____ The botanical characteristics of the similar variety 'Violette Nive' used for examination as a comparison are as follows:~~

Plant:

~~_____ Stemmed or non-stemmed Stemless~~

5 ~~_____ Growth habit Spreading~~

~~_____ Height 7 cm~~

~~_____ Plant cover 55 cm~~

Stem:

~~_____ Length 37 cm~~

10 ~~_____ Branching Much~~

~~_____ Pubescence Present~~

Leaf:

~~_____ Overall form Lanceolate~~

~~_____ Apex form Acute~~

15 ~~_____ Base form Acute~~

~~_____ Serrated, lobed or not Serrated or lobed~~

~~_____ Margin Serrated or slightly lobed~~

~~_____ Length 2.8 cm~~

~~_____ Width 1.5 cm~~

20 ~~_____ Color of upper surface Grayish olive green (R.H.S. 137B)~~

~~_____ Color of under surface Moderate yellow green (R.H.S. 137C)~~

~~_____ Variegation Absent~~

~~_____ Leaf luster Matte~~

~~_____ Vein Apparent~~

25 ~~_____ Petiole length 1.2 cm~~

~~_____ Stipule length 2.5 cm~~

Flower:

~~_____ Peduncle length 10 cm~~

~~_____ Peduncle thickness Thin~~

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- ~~———— Peduncle color — Strong yellow-green (R.H.S. 144B)~~
~~———— Flower form — Vertically oblong~~
~~———— Flowering direction — Upward~~
~~———— Longitudinal diameter — 4.0 cm~~
5 ~~———— Horizontal diameter — 3.4 cm~~
~~———— Ruffle of petal margin — Weakly ruffled~~
~~———— Petal curving — Weak~~
~~———— Petal number — Single~~
~~———— Flower color — Self-colored~~
10 ~~Upper petal~~
~~———— Form — Round~~
~~———— Size — 2.0×2.0 cm~~
~~———— Petal color — Self-colored~~
~~———— Ground color — Pale yellow-green (R.H.S. 157A)~~
15 ~~———— Blotch — Absent~~
~~Side petal~~
~~———— Form — Ovate~~
~~———— Size — 1.5×1.5 cm~~
~~———— Petal color — Self-colored~~
20 ~~———— Ground color — Pale yellow-green (R.H.S. 157A)~~
~~———— Blotch — Absent~~
~~Lower petal~~
~~———— Form — Cordate~~
~~———— Size — 1.6×2.1 cm~~
25 ~~———— Petal color — Self-colored~~
~~———— Ground color — Pale yellow-green (R.H.S. 157A)~~
~~———— Blotch — Absent~~
~~———— Eye color — Vivid yellow (R.H.S. 13A)~~
~~———— Eye size — Small~~

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~~_____ Thickness of petal Thin~~~~_____ Spur length Longer than the sepal appendage~~~~_____ Sepal Short~~~~_____ Number of flowers Many~~5 **Seed:**~~_____ Color Deep brown~~**Physical property:**~~_____ Flowering time Intermediate~~~~_____ Fragrance Faint or weak~~10 **Resistance**~~_____ Rain Strong~~~~_____ Cold Strong~~~~_____ Heat Medium~~~~_____ Disease Strong~~15 ~~_____ Pest Strong~~~~_____ The botanical characteristics of the similar variety 'Alpine Summer' used for examination as a comparison are as follows.~~**Plant:**~~_____ Stemmed or non-stemmed Stemmed~~20 ~~_____ Growth habit Spreading~~~~_____ Height 10 cm~~~~_____ Plant cover 52 cm~~**Stem:**~~_____ Length 44 cm~~25 ~~_____ Branching Much~~~~_____ Pubescence Present~~**Leaf:**~~_____ Overall form Lanceolate~~~~_____ Apex form Acute~~

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- ~~Base form~~ Acute
~~Serrated, lobed or not~~ Serrated or lobed
~~Margin~~ Serrated or slightly lobed
~~Length~~ 2.3 cm
5 ~~Width~~ 1.1 cm
~~Color of upper surface~~ Grayish olive green (R.H.S. 137A)
~~Color of under surface~~ Moderate yellow green (R.H.S. 137C)
~~Variation~~ Absent
~~Leaf luster~~ Matte
10 ~~Vein~~ Apparent
~~Petiole length~~ 0.0 cm
~~Stipule length~~ 2.0 cm
Flower:
~~Peduncle length~~ 8.0 cm
15 ~~Peduncle thickness~~ Thin
~~Peduncle color~~ Strong yellow green (R.H.S. 144A)
~~Flower form~~ Vertically oblong
~~Flowering direction~~ Horizontal
~~Longitudinal diameter~~ 2.6 cm
20 ~~Horizontal diameter~~ 2.1 cm
~~Ruffle of petal margin~~ Flat
~~Petal curving~~ Weak
~~Petal number~~ Single
~~Flower color~~ Multi colored
25 Upper petal
~~Form~~ Elliptical
~~Size~~ 1.3x1.0 cm
~~Petal color~~ Self colored
~~Ground color~~ Strong purple (R.H.S. 86B)

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~~Blotch Absent~~~~Side-petal~~~~Form Ovate~~~~Size 1.0x0.7 cm~~5 ~~Petal color Bi-colored~~~~Ground color Vivid yellow (R.H.S. 9B)~~~~Blotch Absent~~~~Margin color Light purple (R.H.S. 85B)~~~~Vein color Dark reddish purple (R.H.S. 79A)~~10 ~~Lower-petal~~~~Form Cordate~~~~Size 0.9x1.2 cm~~~~Petal color Self-colored~~~~Ground color Vivid yellow (R.H.S. 9B)~~15 ~~Blotch Absent~~~~Vein color Dark reddish purple (R.H.S. 79A)~~~~Eye color Vivid yellow (R.H.S. 13A)~~~~Eye size Small~~~~Thickness of petal Thin~~20 ~~Spur length Longer than the sepal appendage~~~~Sepal Short~~~~Number of flowers Many~~~~Seed:~~~~Color Deep brown~~25 ~~Physical property:~~~~Flowering time Intermediate~~~~Fragrance Faint or weak~~~~Resistance~~~~Rain Strong~~

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~~Gold Strong~~~~Heat Medium~~~~Disease Strong~~~~Pest Strong~~

5 SUMMARY OF THE NEW VARIETY

The new variety of viola plant named 'SUNVIOHO', which is the first vegetative propagated variety, has a spreading plant habit with very long epigeal stem. The plant height is low and the branching is abundant. The flowers of the new variety are ~~vertically-oblonged~~oblong and very small, and the color of flower is pale yellow green with vivid yellow eye. The new variety has a high resistance to cold, pests and diseases.

BRIEF DESCRIPTION OF THE DRAWING

FIG.1 is a photograph giving a partial view of the new variety of *Viola cornuta* plant 'SUNVIOHO' planted in pots.

15 FIG.2 is a photograph of flowers of the new variety of *Viola cornuta* plant 'SUNVIOHO'.

DESCRIPTION OF THE VARIETY

The botanical characteristics of this new and distinct variety of *Viola cornuta* plant named 'SUNVIOHO' are as follows.

20 Plant:

Stemmed or non-stemmed - Stemmed

Growth habit - Spreading

Height - Approximately 10 cmPlant cover - Approximately 90 cm

25 Stem:

Length - Approximately 50 cmBranching - Very ~~much~~abundant branching

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Pubescence - Present

Leaf:

Overall form - ~~Long oblong~~ Narrow elliptic

Apex form - Obtuse

5 Base form - Acute

~~----- Serrated, lobed or not - Serrated or lobed~~Margin - ~~Serrated or~~ slightly lobedLength - Approximately 4.0 cmWidth - Approximately 2.0 cm10 Color of upper surface - Grayish olive green (Near R.H.S. 137A)Color of under surface - Moderate yellow green (Near R.H.S. 137C)

Variegation - Absent

Leaf luster - Matte

Vein - Apparent

15 Petiole length - Approximately 4.0 cmStipule length - Approximately 1.5 cm

Flower:

Peduncle length - Approximately 12 cm

Peduncle thickness - Thin

20 Peduncle color - Strong yellow green (Near R.H.S. 144A)

Flower form - Vertically oblong

Flowering direction - Upward

Longitudinal diameter - Approximately 3.5 cmHorizontal diameter - Approximately 2.8 cm

25 Ruffle of petal margin - Weakly ruffled

Petal curving - Weak

~~----- Petal number - Single~~~~-----~~
Number of petals per flower - Five (two upper petals, two side petals and one lower petal)

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~~Flower color - Self-colored~~~~Time of flowering - Early November to June in Japan, except for Hokkaido~~~~Lastingness of the individual bloom - Approximately 5-7 days~~

Upper petal

5 Form - Round

Size - Approximately 1.7×1.7 cmPetal color - ~~Self~~Single-coloredGround color - Pale yellow green (Near R.H.S. 157A)

Blotch - Absent

10 Side petal

Form - Ovate

Size - Approximately 1.5×1.3 cmPetal color - ~~Self~~Single-coloredGround color - Pale yellow green (Near R.H.S. 157A)

15 Blotch - Absent

Lower petal

Form - Cordate

Size - Approximately 1.5×1.8 cmPetal color - ~~Self~~Single-colored20 Ground color - Pale yellow green (Near R.H.S. 157A)

Blotch - Absent

Eye color - Vivid yellow (Near R.H.S. 13A)

Eye size - Small

Thickness of petal - Thin

25 Spur length - Longer than the sepal appendage

Sepal - Short

Number of flowers - Many

Seed:

Color - Deep brown

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Reproductive Organs:Stamen - Five stamens joined around the ovary. Two lower stamens spurredStamen length - Approximately 2.0 mmAnther color - Near R.H.S. 9D (Yellow Group). Tip: near R.H.S. 166B5 (Greyed-orange group)Pollen color - Near R.H.S. 9D (Yellow group)Pistil length - Approximately 4.5 mm.Stigma shape - EllipsoidalStigma length - Approximately 1.0 mm10 Stigma color - Near R.H.S. 144B (Yellow-green group)Style length - Approximately 1.0 mmStyle color - Near R.H.S. 144D (Yellow-green group)Ovary color - Near R.H.S. 144C (Yellow-green group)Physical property:15 Flowering time - EarlyFragrance - Faint or weakResistanceRain - StrongCold - Strong20 Heat - MediumThis variety as survived temperatures of at least -7°C. The plant grows well
at temperatures up to 25°CDisease - StrongPest - Strong25 This new variety of *Viola cornuta* plant 'SUNVIOHO' is most suitable for
flower bedding and potting, hanging basket and ground cover.

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COMPARISON WITH SIMILAR VARIETY

The new variety of *Viola cornuta* plant 'SUNVIOHO' is different from a similar variety, 'Violetto Nive' in following points,

1. The plant width of 'SUNVIOHO' is wider than that of 'Violetto Nive'.
- 5 2. 'SUNVIOHO' has ~~long-oblong~~narrow elliptic leaf while 'Violetto Nive' has lanceolate one.
3. The leaf color of upper surface of 'SUNVIOHO' is near R.H.S.137A while that of 'Violetto Nive' is near R.H.S.137B.
4. The longitudinal diameter of 'SUNVIOHO' is smaller than that of
10 'Violetto Nive'.
5. The side petal form of 'SUNVIOHO' is ovate while that of 'Violetto Nive' is round.
6. The flowering time of 'SUNVIOHO' is early while that of 'Violetto Nive' is intermediate.

15 The new variety of *Viola cornuta* plant 'SUNVIOHO' is different from a similar variety, 'Alpine Summer' in following points,

1. The plant width of 'SUNVIOHO' is wider than that of 'Alpine Summer'.
2. 'SUNVIOHO' has ~~long-oblong~~narrow elliptic leaf while 'Alpine Summer' has lanceolate one.
- 20 3. The flowering direction of 'SUNVIOHO' is upward while that of 'Alpine Summer' is horizontal.
4. The ruffle of petal margin of 'SUNVIOHO' is weakly ruffled while that of 'Alpine Summer' is flat.
5. 'SUNVIOHO' has ~~self~~single-colored flower while 'Alpine Summer' has
25 multi-colored one.
6. The color of the upper petal of 'SUNVIOHO' is near R.H.S. 157A while that of 'Alpine Summer' is near R.H.S. 86B.
7. The color of the side petal of 'SUNVIOHO' is near R.H.S. 157A while

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that of 'Alpine Summer' is near R.H.S. 9B with near R.H.S 85B margin and near R.H.S. 79A vein.

8. The color of lower petal of 'SUNVIOHO' is R.H.S. near 157A while ~~against~~ that of 'Alpine Summer' is R.H.S. near 9B with near R.H.S. 79A vein.

5 9. The flowering time of 'SUNVIOHO' is early while that of 'Alpine Summer' is intermediate.